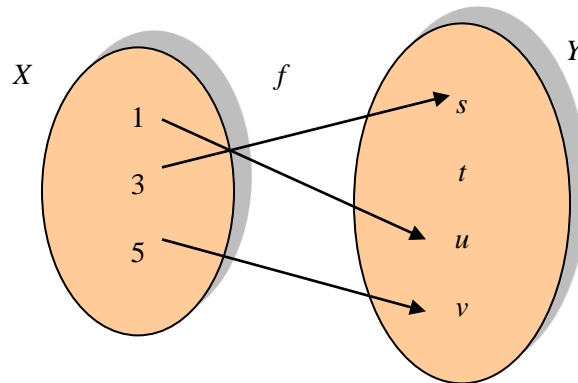


TUTORIAL 2

1. Let $X = \{1, 3, 5\}$ and $Y = \{s, t, u, v\}$.



- Write down the domain and codomain.
 - Find $f(1)$ and $f(3)$.
 - What is the range of f ?
 - Represent f as a set of ordered pairs.
 - Is f one-to-one? Is f onto?
2. Let $f(x) = 2x + 1$ and $g(x) = x^2 - 2$. The domain for both f and g is the set of real numbers. Find the formula for the composition function $g \circ f$.
3. Solve the following equation.
- $\log_5 x = 4 - 2\log_5 3$
 - $5^{\log_3 x} = \frac{1}{125}$
 - $\log_3 [\log_2(2m - 1)] = \log_3 9$
4. Sketch the graph of the following function on the same graph:
- $y = |2x + 1|$
 - $y = 2 \log_3 x$
5. Find the values of the following quantities.
- $$\lceil 8.32 \rceil - \lceil -2.94 \rceil \times \lceil 5.11 \rceil + \lfloor -0.98 \rfloor$$

6. Simplify the following:

- $\frac{n!}{(n-1)!}$
- $\frac{(n+2)!}{n!}$